

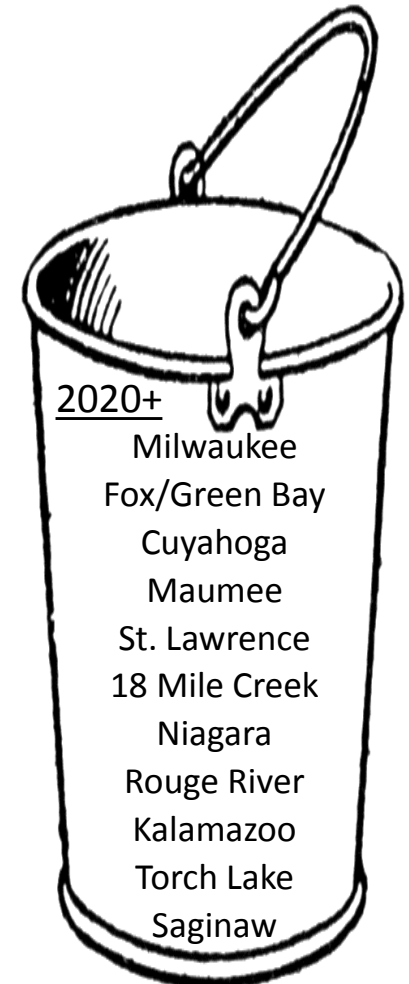
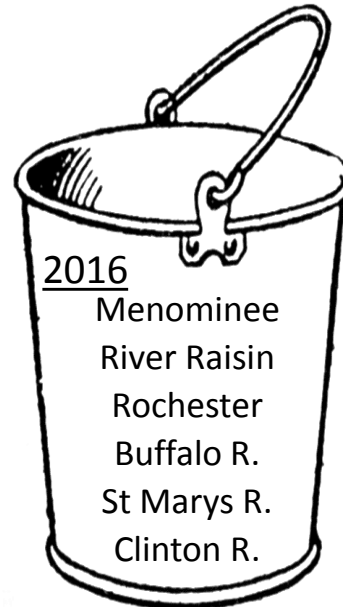
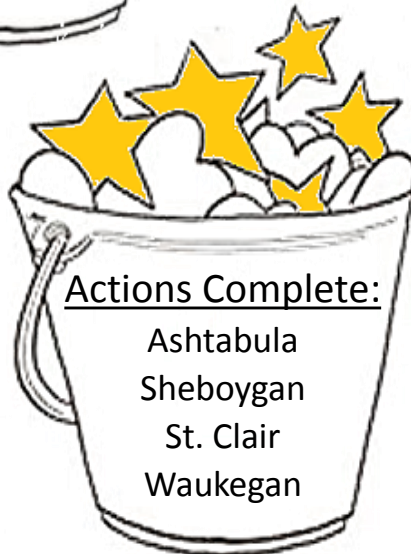
# Great Lakes Restoration Initiative: AOC Program

## Federal Partners Technical Support to AOCs AOC Annual Conference March 2, 2016



# Progress Towards Completing Actions

## Complete



# AOC Technical Support

- Federal Agency actions taken to help AOCs develop overall program goals and objectives, as well as assist with special projects (e.g., habitat plans), toward a comprehensive pathway to delisting.

# AOC Technical Support Examples

- USGS – H-E corridor, Maumee Modeling Project for 2016-17)
- USFWS – Assessment of High Quality Wetlands in Rochester)
- USACE –Engineering Studies and Designs (e.g., Camp Miakonda, Ottawa River, OH)
- NOAA – Design Support, Monitoring Strategies, other

# USGS – Technical Support

- **Scope of Project**

- Provide contemporary data and information necessary to make informed decisions related to population and habitat restoration.
- Address needs for delisting BUI's related to losses/degraded populations and habitat.

# USGS – Technical Support

- **Approach**

- Inventory and research on physical and biological resources in AOC.
  - Intensive field sampling programs.
  - Bio-physical modeling.
  - Partnership development, shared vision, cumulative impact.
  - Effective communication.

# USGS – Technical Support

## • Results – Maumee River Habitat

### Suitable Spawning Habitat for Walleye in the Maumee River, Ohio

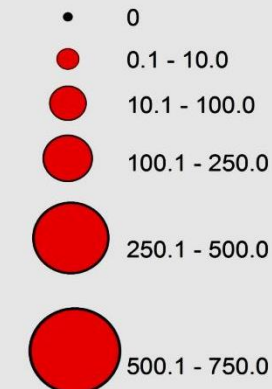
Data Source: Jim Boase, U.S. Fish and Wildlife Service; Brian Schmidt and Jessica Sherman, University of Toledo

#### Legend

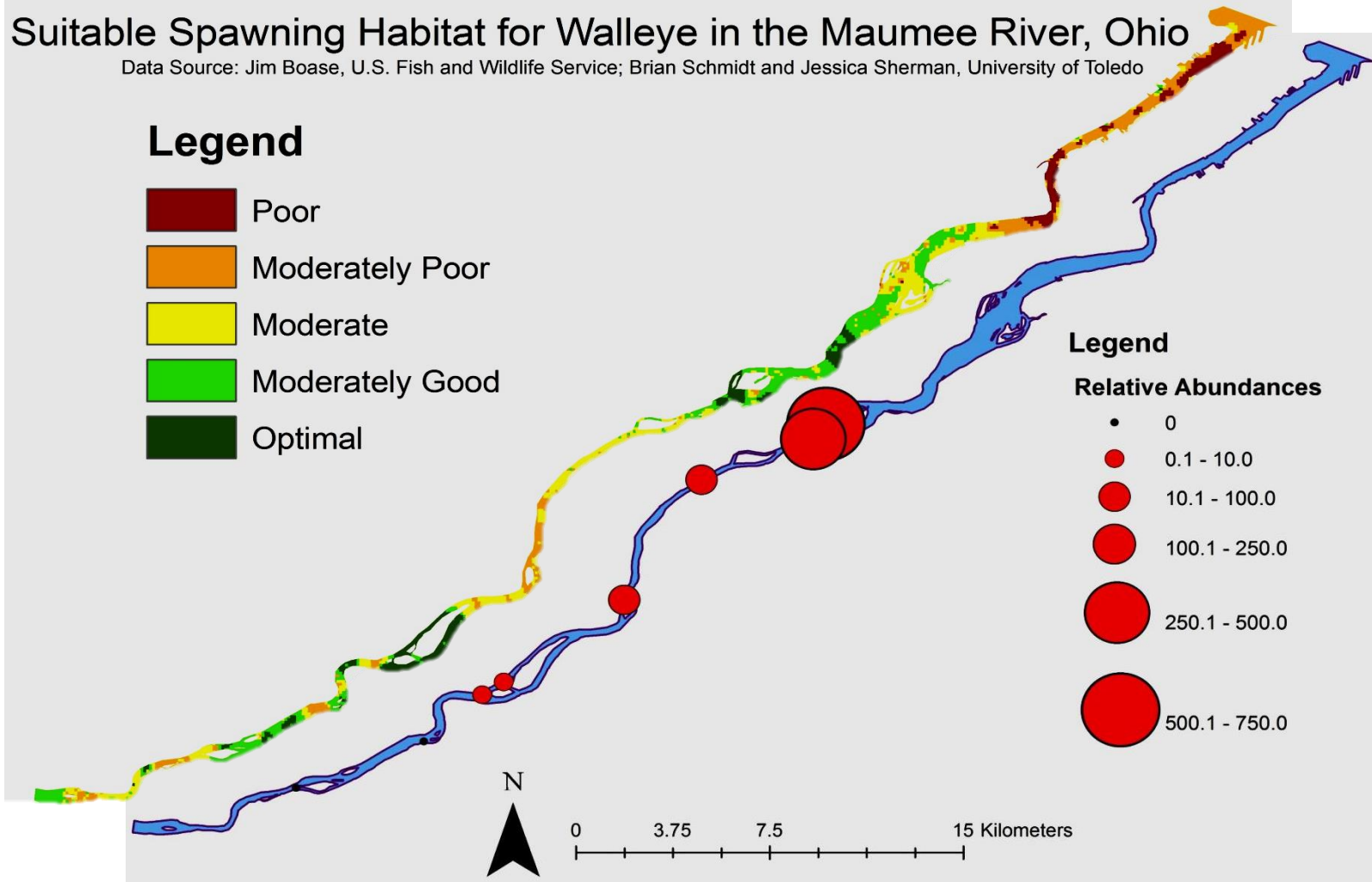


#### Legend

##### Relative Abundances



0 3.75 7.5 15 Kilometers



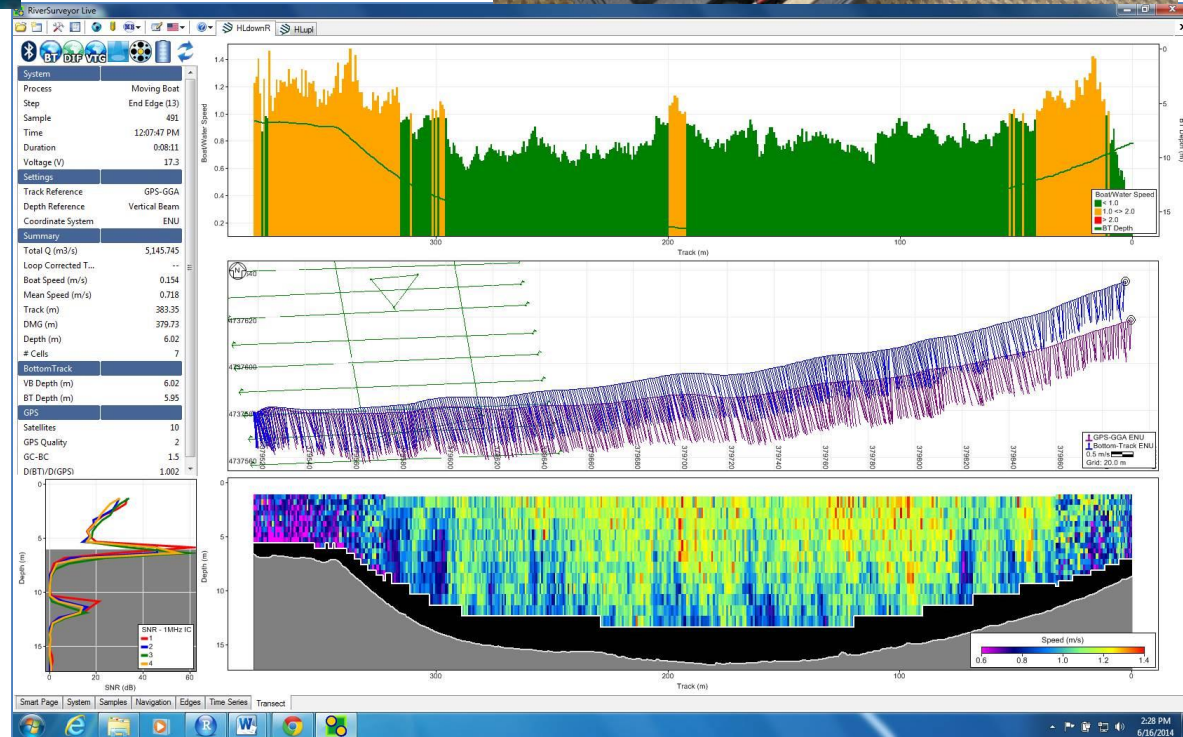


# USGS – Technical Support



Sidescan Sonar,  
Underwater Video,  
SCUBA

Acoustic Doppler  
Current Profile  
(ADCP)





# USGS – Technical Support







# USGS – Technical Support



- **Results – HEC Spawning Reefs and Shorezone**
  - Positive response by fauna.
  - Supporting multiple life history stages, species.
  - Actively monitoring physical maturation and biological responses.
  - Developing long-term monitoring objectives and key indicators.





# USFWS – Technical Support

- **Scope of Project**

- Provide technical/scientific and habitat restoration expertise ranging from BUI criteria review/selection, to BUI assessment and removal.
- Address the six contaminated sediment & habitat BUIs:
  - 1) Loss of Fish and Wildlife Habitat;
  - 2) Degraded Fish and Wildlife Populations;
  - 3) Bird or Animal Deformities or Reproductive Problems;
  - 4) Degradation of Benthos;
  - 5) Fish Tumors and Deformities; and
  - 6) Degradation of Phytoplankton and Zooplankton Populations.



# USFWS – Technical Support

- **Approach**

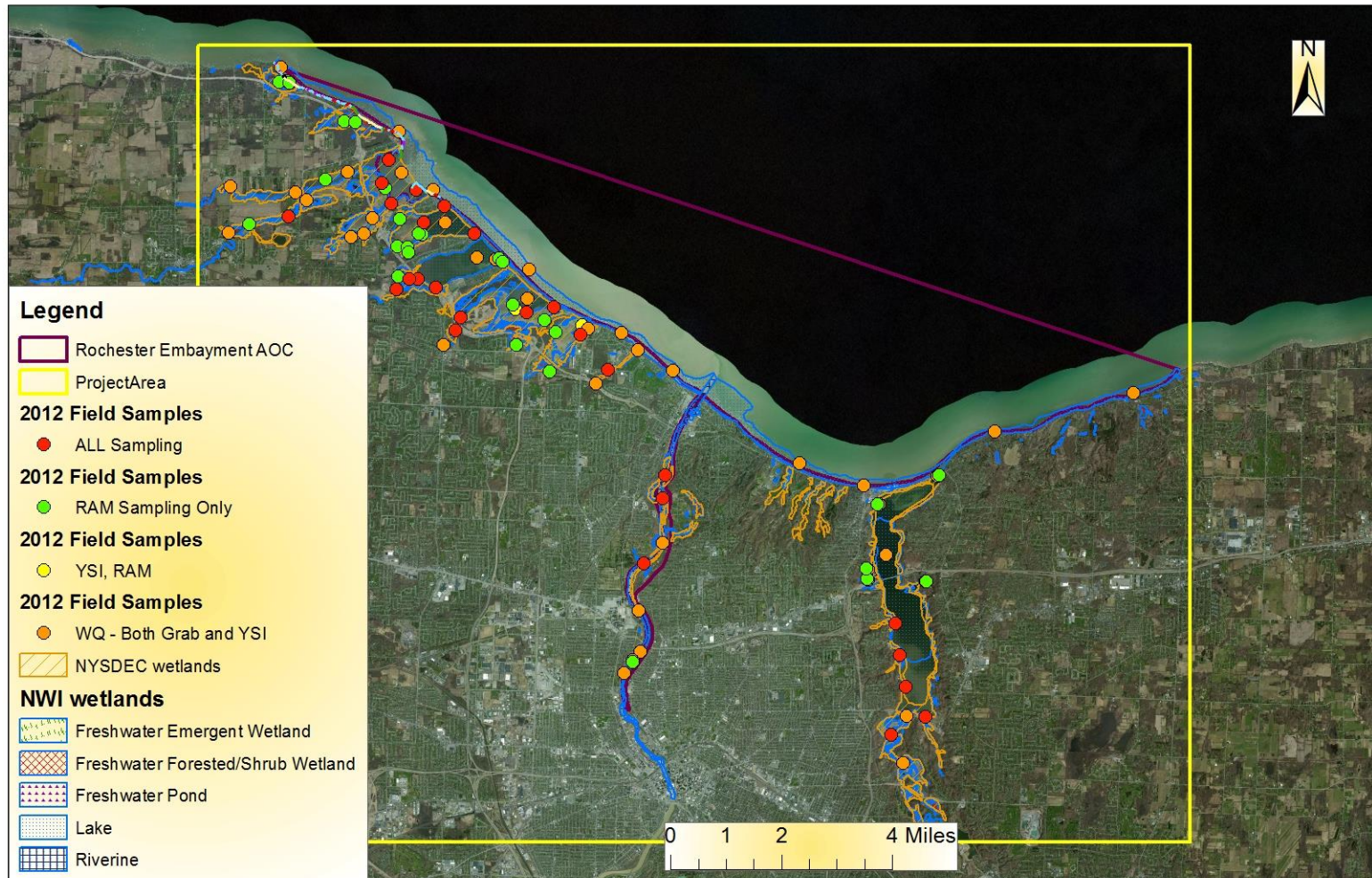
- Work with AOC to determine needs and path forward.
  - BUI criteria assessment/revision.
  - Review/assessment of current data.
  - Review/develop approaches to address BUI criteria.
  - Review BUI Removal packages and AOC Delisting packages.



# USFWS – Technical Support



## • Results – Rochester Embayment Wetlands





# USFWS – Technical Support



## • Results – Rochester Embayment Wetlands

### WETLAND ASSESSMENT IN THE ROCHESTER EMBAYMENT AREA OF CONCERN IN SUPPORT OF THE LOSS OF FISH AND WILDLIFE HABITAT BUI REMOVAL EVALUATION



#### FINAL REPORT

**Prepared By:** U.S Fish and Wildlife Service, New York Field Office

**Contributors:** Dan Gefell, Emily VanWyk, Anne Secord, Nick Vermeulen, Emma Buckley, Justin Ecret, Andy Lowell, Amy Roe, Carl Schwartz

**Prepared For:** U.S. Environmental Protection Agency, Great Lakes National Program Office

**Funded by:** U.S. Environmental Protection Agency, Great Lakes Restoration Initiative

March 14, 2014

### WETLAND RESTORATION RECOMMENDATIONS AT THE ROCHESTER EMBAYMENT AREA OF CONCERN IN SUPPORT OF THE LOSS OF FISH AND WILDLIFE HABITAT BUI REMOVAL



#### FINAL STATUS REPORT

**Prepared By:** U.S Fish and Wildlife Service, New York Field Office

**Contributors:** Dan Gefell, Emily VanWyk, Gian Dodici, Anne Secord, Nick Vermeulen, Carl Adams, Carl Schwartz

**Prepared For:** U.S. Environmental Protection Agency, Great Lakes National Program Office

**Funded by:** U.S. Environmental Protection Agency, Great Lakes Restoration Initiative

December 19, 2014

# USFWS – Technical Support



- **Results – Rochester Embayment Wetlands**

## Habitat Restoration

Buck Pond

Long Pond

Salmon Creek

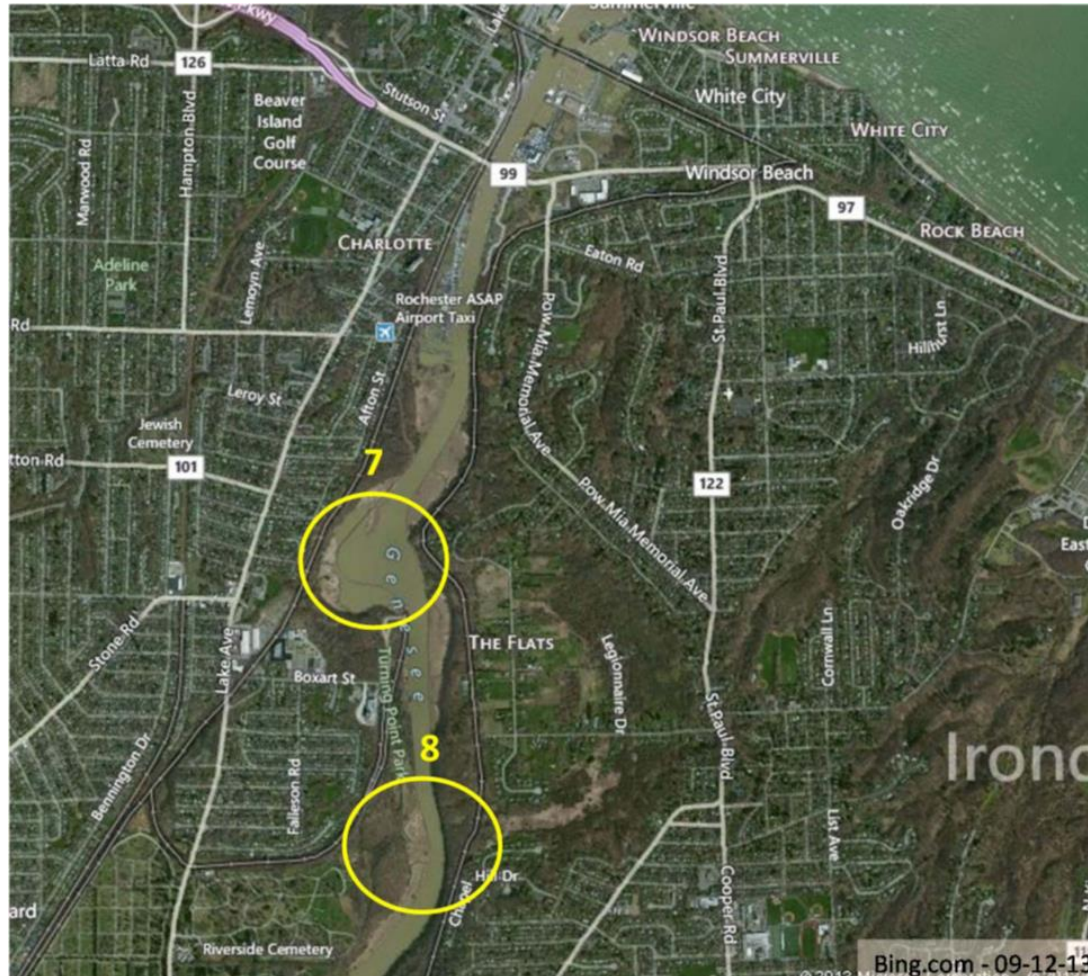




# USFWS – Technical Support



- **Results – Rochester Habitat BUI and Natural Resource Damage Assessment & Restoration Funds**





# USFWS – Technical Support



- **Results – Niagara River Fish/Wildlife Populations**



# USACE – Technical Support

- **Scope of Project**

- The Camp Miakonda GLRI project restored at least 10 acres of wetland, 30 acres of upland habitat, and 1200 linear feet of stream along the Ottawa River in the Maumee River AOC. The University of Toledo / Partnership for Clean Streams received funding from USEPA and using the USACE Great Lakes Remedial Action Plan program partnered with the Army Corps of Engineers to provide technical assistance.

# USACE – Technical Support

- **Approach**

- The USEPA grant focused on 3 BUIs: Loss of Fish and Wildlife Habitat BUI (BUI #14); the Degradation of Benthos (BUI #6) and; Degradation of Fish and Wildlife Populations (BUI #3)
- Marshaling funding from two additional sources thru an Agreement that leveraged \$400,000 of local match the Partnership for Clean Streams formally requested that USACE develop the engineering evaluations and designs to move quickly from planning to restoration



# USACE – Technical Support

- **Ecosystems Services Integrated Design Approach**
  - Significantly reduce sediment loading from eroding stream banks
  - Maximize the diversity of plant communities, both wetland and upland
  - Improve habitat for migrating waterfowl, songbirds and other wildlife
  - Utilizing wetlands to capture sediments and nutrients as well as additional flood storage capacity



US Army Corps  
of Engineers®

# USACE – Technical Assistance

- **Ecosystem Services Implementation Results**



<http://www.partnersforcleanstreams.org/projects/camp-miakonda-stream-restoration/81-march-update>



# NOAA – Technical Support in AOCs

## Scope of Project

- NOAA provides technical and scientific expertise for all habitat restoration projects:
  - Support projects progression from engineering/design through construction to post construction monitoring
  - Hands-on assistance on technical and regulatory compliance issues (NEPA, SHPO, permitting, etc.)
  - Stakeholder engagement, outreach, and reporting
- Program coordination and grant administration



# NOAA – Technical Support in AOCs

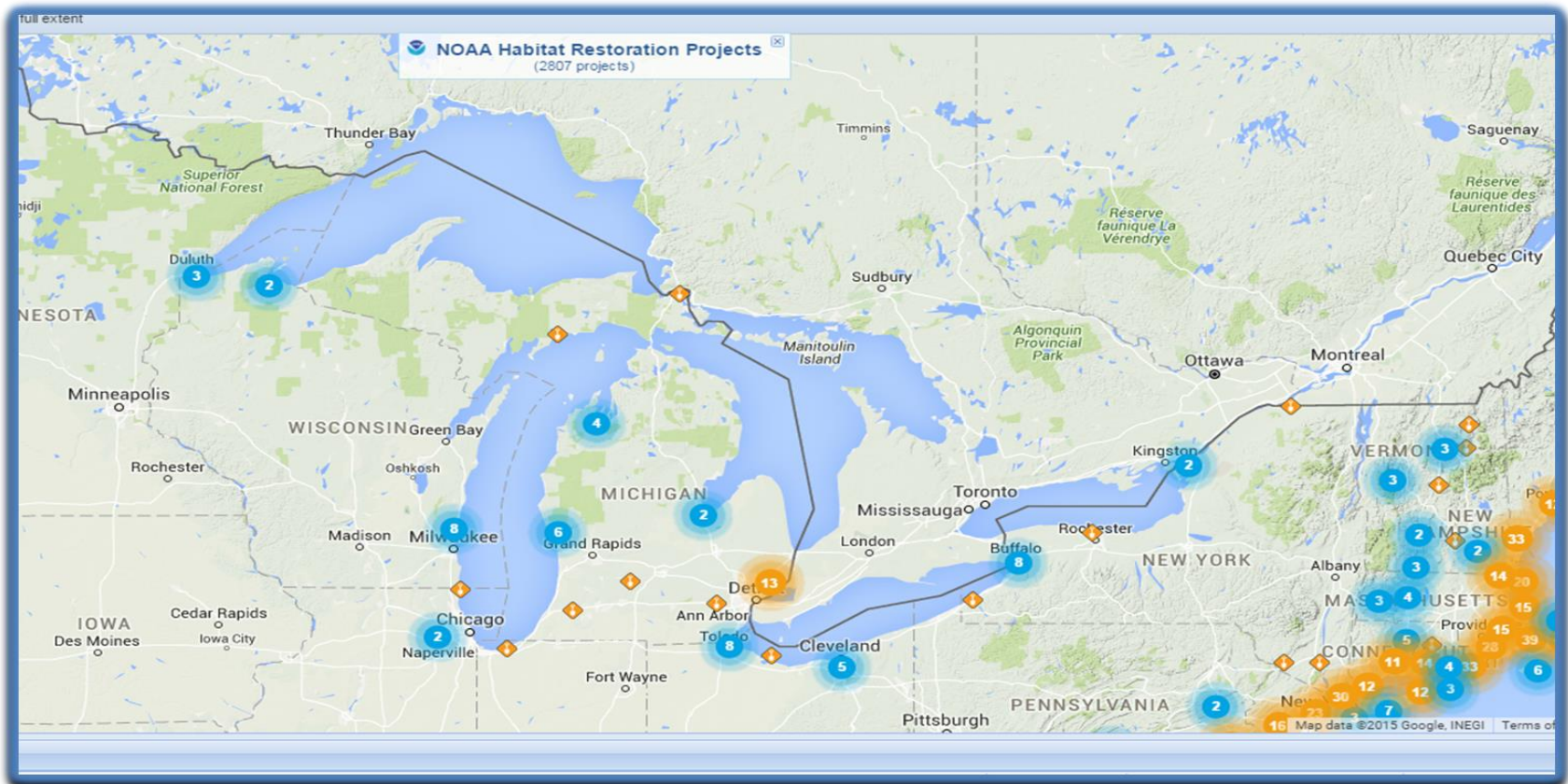
## Scope of Project

- Provide assistance to longer-term AOCs:
  - Develop and scope out project ideas
  - Support refining projects required for delisting
  - Develop strategies on how to phase projects from feasibility studies through construction
  - Assist in developing monitoring strategies
  - Stakeholder and community support
  - Funding assistance
  - Coordination with other programs (e.g., NRDA)



# NOAA: Technical Support in AOCs

**Approach:** Work with AOC to determine needs and path forward





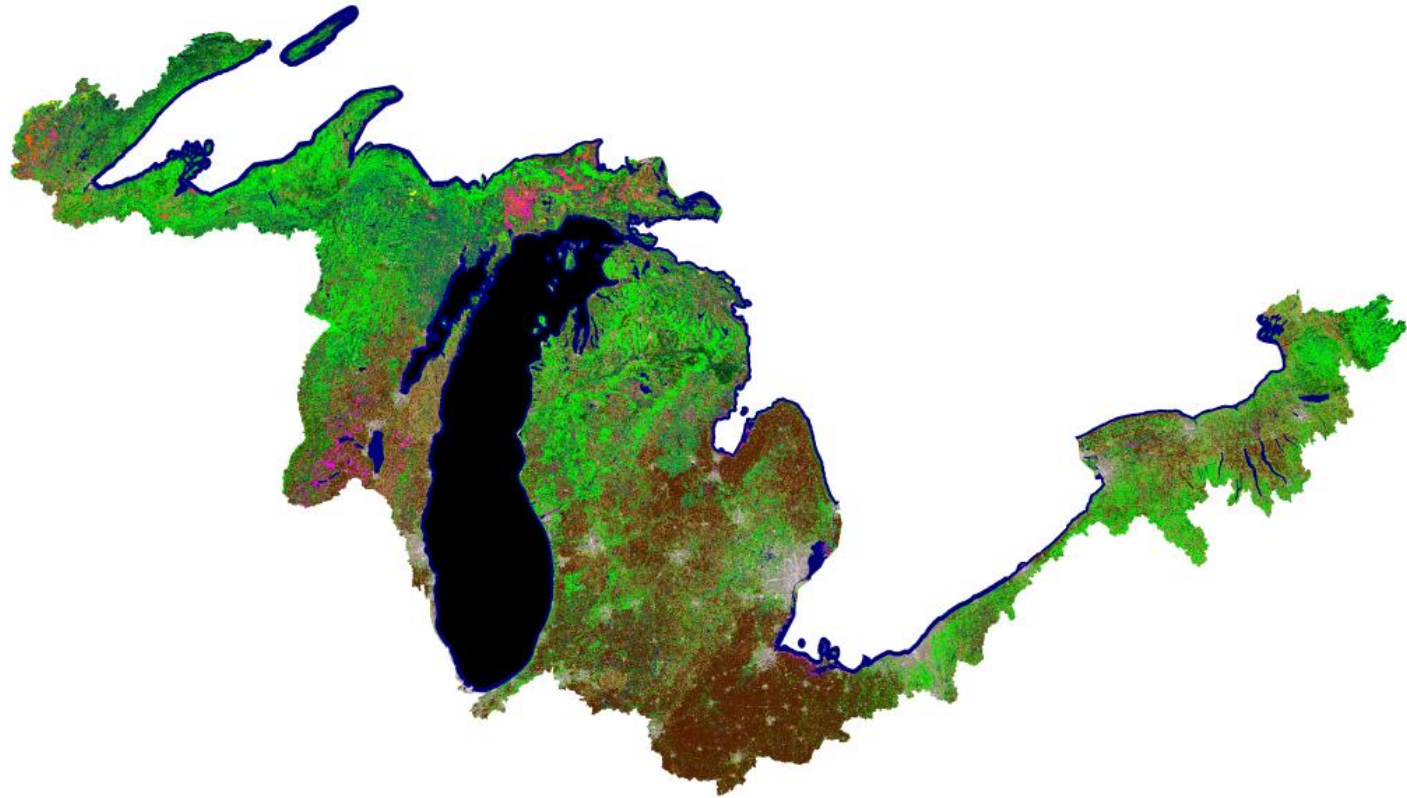
# NOAA – Technical Support in AOCs

## Results

- Example projects planned for this year!
  - Howard Farms (Maumee AOC)
  - Little Rapids (St. Marys River AOC)
  - Clinton River Spillway
  - Manistique River Sediment Remediation and Restoration
  - Veterans Memorial Park and Mill Debris Removal (Muskegon Lake AOC)
  - Buffalo River Habitat Restoration
  - Stony Island (Detroit River AOC)
  - Kinnickinnic River Feasibility Study (Milwaukee Estuary AOC)
  - Henry Ford Estate Dam Design (Rouge River AOC)



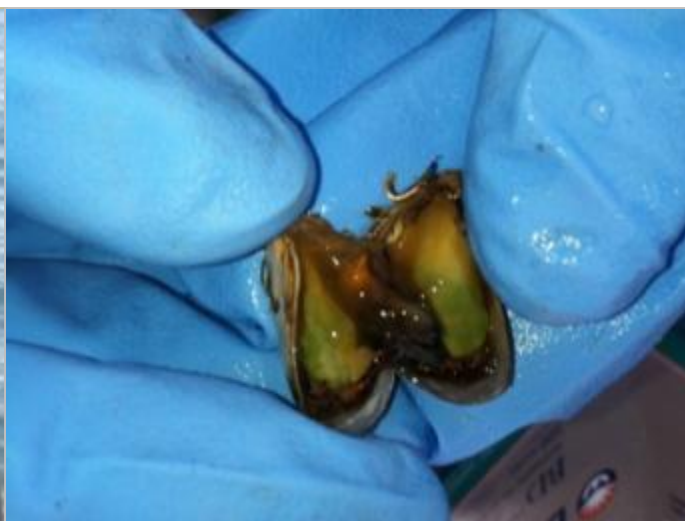
# Additional NOAA Technical Resources





# Additional NOAA Technical Resources

- Lake Erie Harmful Algal Bloom Tracker\*
- St. Louis River AOC Data System
- NOAA Lake Level Viewer
- Great Lakes Water Level Dashboard
- Coastal Change Analysis Program (C-CAP)
- Great Lakes Coastal Forecasting System
- Great Lakes Aquatic Nonindigenous Information System
- Great Lakes Aquatic Habitat Framework
- And more...



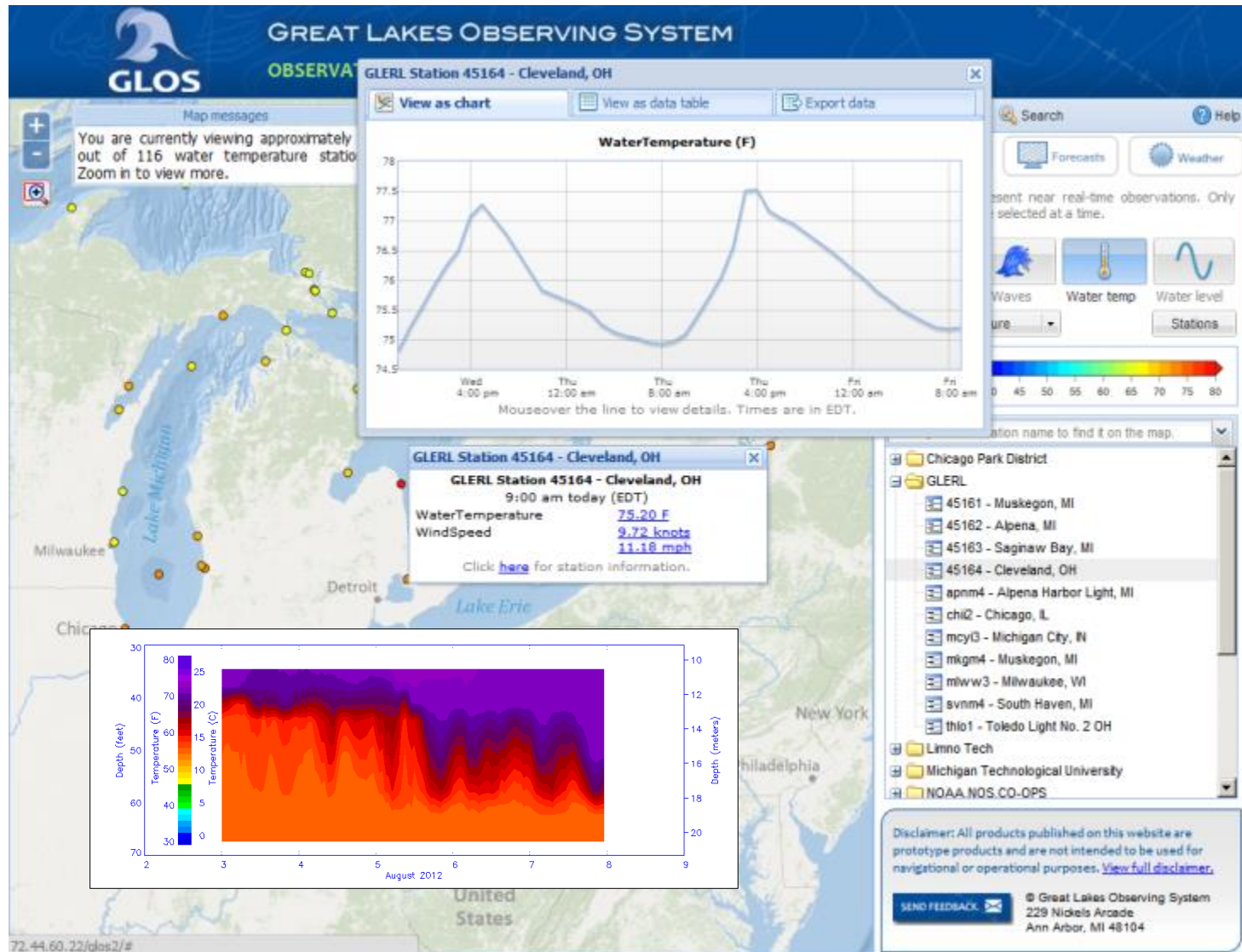


# Land Acquisition through CELCP



# Great Lakes Observing System: Data and Tools

GLOS integrates real-time and archival data from multiple programs, and provides a framework for housing data management and decision support tools.





# Questions?